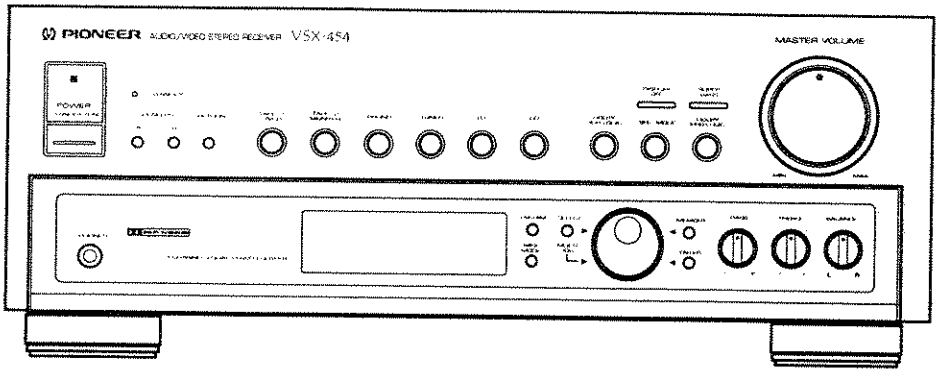
SPARE PARTS MASTER

Operating Instructions

AUDIO/VIDEO STEREO RECEIVER

VSX-454



Thank you for buying this Pioneer product.
Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.

WARNING : TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

DEMO MODE

- The demonstration mode is activated by turning on the power switch while holding down the RETURN button (from power standby condition). The demonstration will appear on the display.
- Press any button to cancel the demonstration. Activating the demonstration mode causes memory contents to return to their original default condition, except the tuner.

RETURN function

This function returns the unit to its initial settings with the tuner ready to receive a broadcast. This is helpful during troubleshooting or when no sound is output. For details, refer to page 11.

IMPORTANT

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

PIONEER®
The Art of Entertainment

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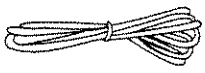
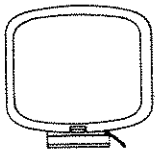
ACCESSORY ITEMS

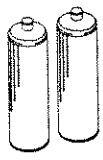


FM antenna



AM Loop Antenna

Remote control unit



Dry cell battery (AA/R6) × 2

SURROUND EFFECT

This unit has a built-in surround processor for adding presence and an expansive effect to the sound.

STUDIO:

Select this position to enjoy the effect of listening to music in a recording studio.
The actual source sound is output through the front speakers, and the added reverberated sound is output through the rear speakers.
This is particularly suitable for a source that has a lot of reverberation.

SIMULATED SURROUND:

The "SIMULATED SURROUND" creates the effects of reverberated and reflected sound from the walls and ceiling similar to a concert hall. These sound-effects added to the actual sound from the source make you feel as if you were in a more expanded space. The different ranges of the expanded space can be set by the DELAY TIME button.
Set the Delay Time to 15 ms or 20 ms for a live-house concert. For chamber music, set to 20 ms. For orchestral music, set to 30 ms. The "SIMULATED SURROUND" also gives effects on monaural sources by outputting the added reverberated sound from the rear speakers while outputting the actual source sound from the front speakers. Turn on the "SIMULATED SURROUND" for a monaural source to gain effective surround playback.

DOLBY* PRO-LOGIC SURROUND:

Choose this setting for movies and music (especially Video Discs and video tapes bearing the DOLBY SURROUND mark) playback. DOLBY PRO-LOGIC SURROUND continuously detects the size and direction of the dominant signal and cancels undesirable crosstalk, thereby providing signal emphasis. It makes you clearly perceive the directional source of the music. Real flow of sound also can be re-created naturally using this feature. You can feel as if being in an outstanding and expansive sound field. When using DOLBY PRO-LOGIC SURROUND, a delay time setting of 20 ms is commonly used. Use a different setting if you prefer. Even if the video recordings do not bear the DOLBY SURROUND mark, some of them may be Dolby Surround encoded. Choose the SIMULATED SURROUND mode if the source sound signal is mono. Little or no sound will be heard from the surround speakers if the DOLBY PRO-LOGIC SURROUND mode is selected. With DOLBY PRO-LOGIC SURROUND, monaural source sound will be heard only from the center channel at settings other than the PHANTOM position.

> ***Note:***
> *Dolby Surround will not operate correctly if the signal passes through a graphic equalizer. When using Dolby Surround, turn off the TAPE 2 MONITOR or set the graphic equalizer for flat response or to its "through" (or off) setting, if you have one in use.*

*
Manufactured under license from Dolby Laboratories Licensing Corporation.
DOLBY and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

DOLBY 3CH LOGIC

Combining the rear speaker signal with that of the front speakers results in your being able to enjoy a regenerated sound field which has comparatively more presence and a more expansive feeling from the front 3 channels (front L, front R, and center speakers) than that of ordinary stereo regeneration. DOLBY 3CH LOGIC can be used with stereo sources not encoded with DOLBY SURROUND.

DOLBY PRO-LOGIC SURROUND, DOLBY 3CH LOGIC CENTER MODE

(For DOLBY PRO-LOGIC SURROUND and DOLBY 3CH LOGIC)

You can choose from the following settings:

Center Mode Choices:

When using a center speaker:

- **NORMAL**—Low range frequencies, which have little effect on directionality and positioning, are routed to the left and right front speakers. This allows you to use a relatively small size speaker as the center speaker.
- **WIDE**—If you use a large size center speaker, choose this setting. The full frequency range of the Dolby Surround center channel, is routed to the center speaker.

When not using a center speaker: DOLBY PRO-LOGIC SURROUND only

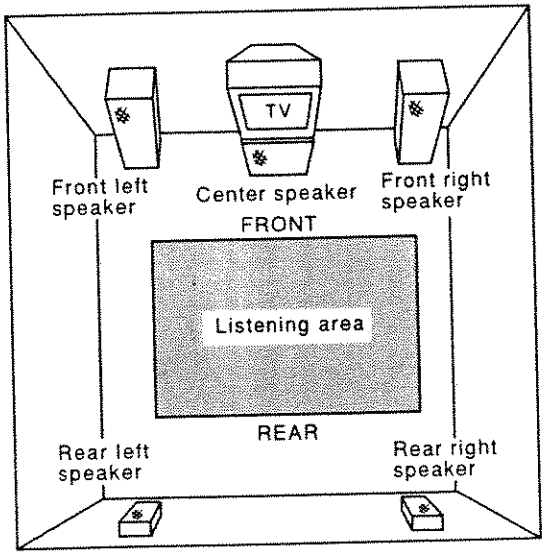
- **PHANTOM**—The signal which would have been sent to the center speaker is divided equally between the left and right front speakers.

With DOLBY PRO-LOGIC SURROUND, monaural source sound will be heard only from the center channel at settings other than the PHANTOM position.

SPEAKER INSTALLATION

To get the most out of the surround system, place the speakers as shown below.

An example of speaker location



If the rear speakers are positioned at an extreme distance from the front and center speakers, the surround level becomes unable to adjust and the surround effect will not be fully achieved.

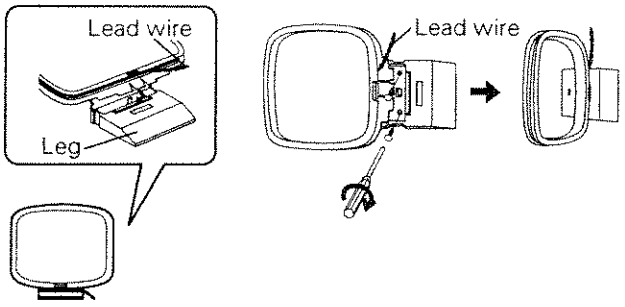
NOTE:

- *To avoid interference with the picture on a nearby TV set, use magnetically shielded speaker systems. This is particularly important for the center speaker since it is usually located closest to the TV.*
- *Position the left and right channel speakers at equal distances from the TV set and approximately 1.8 m from each other.*
- *Position the center speaker above, below, or behind the TV set. Sound may not appear to coincide with the picture if you position it next to the TV set.*
- *Rear speakers are best positioned slightly above ear level.*

CONNECTIONS

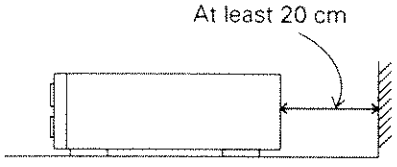
Setting Up the AM Antenna

- Insert the claw on the bottom of the antenna into the groove in the leg.
- Place the antenna on a level surface and rotate it to locate the orientation that yields the best reception.
- Use the attachment hole in the leg to screw to a wall or other location, then insert the claw on the bottom of the antenna into the groove in the leg (fixing the antenna in the direction that gives the best reception.)



Installation Precautions

- The rear panel vents are designed to disperse heat from the unit. Be careful that curtains or other items do not block the vents.
- To improve heat dispersion, set the unit so that it is at least 20 cm away from the wall.

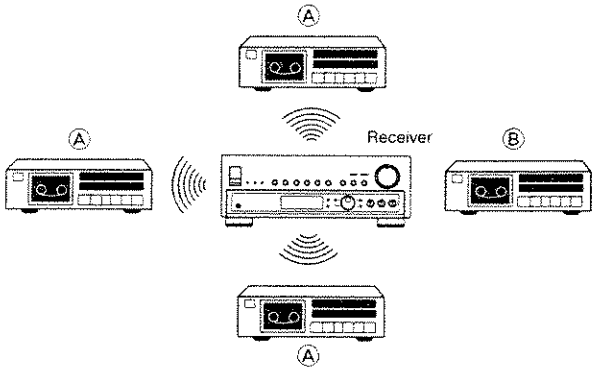


POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or an electric shock. Do not place the unit, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed such that they are not likely to be stepped on. A damaged power cord can cause a fire or give you an electrical shock. Check the power cord once in a while. When you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

Precaution regarding installation position of cassette deck

If the cassette deck is installed in the Ⓐ positions shown in the drawing below, it may be adversely affected during playback. If possible, it's better to install it in the Ⓑ position.



AUDIO SYSTEM CONNECTIONS

NOTE FOR FM ANTENNA:

Stretch the antenna out to its full length, and affix it to a wall, etc.

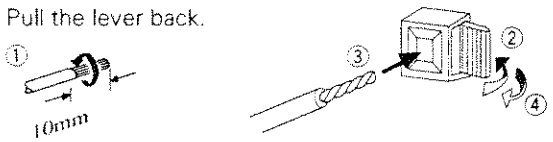
NOTE FOR AM LOOP ANTENNA:

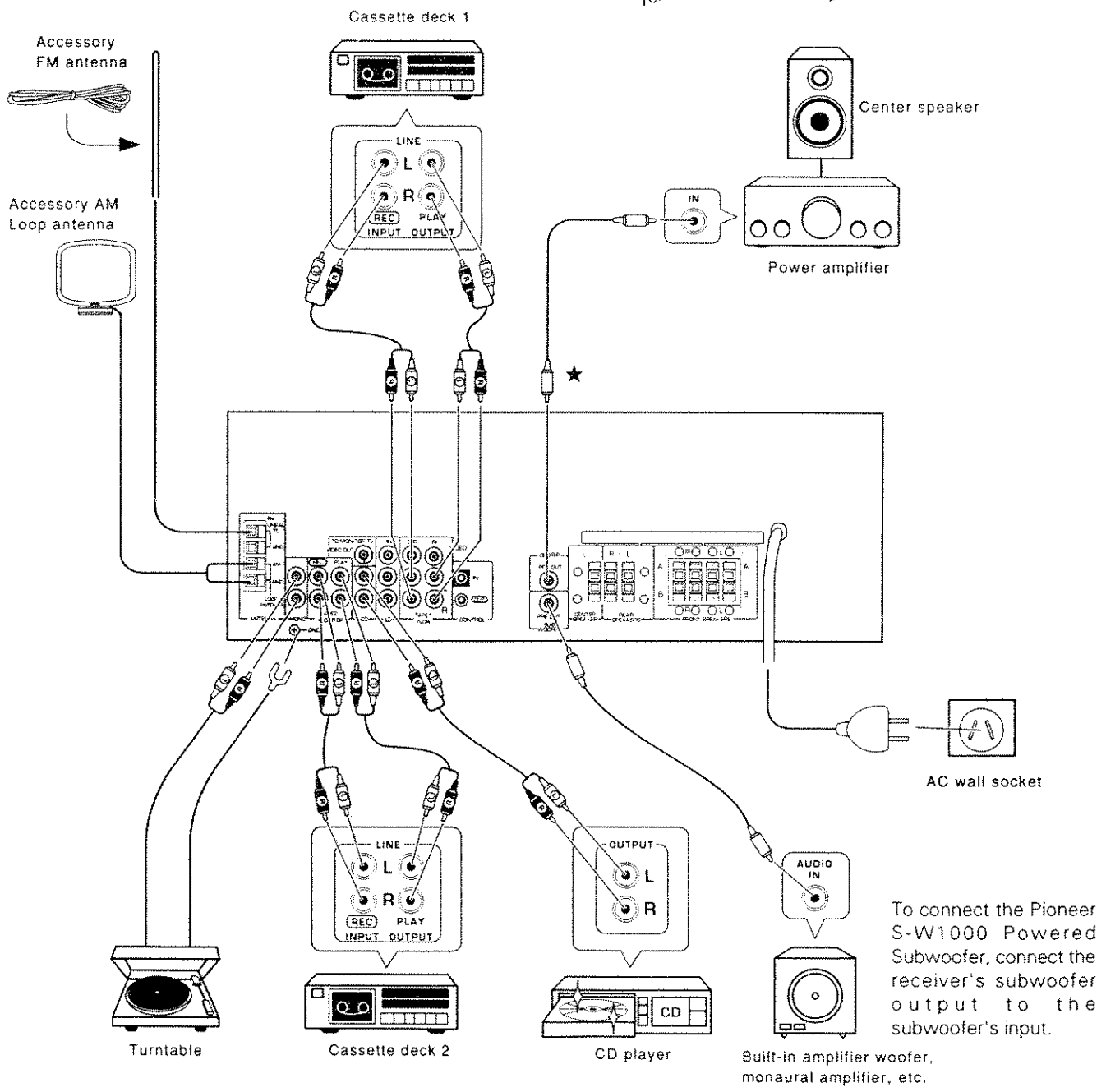
The antenna should be placed at a distance from the receiver, and should not be allowed to touch metallic objects. Avoid placing it near CD players, personal computers, television sets, and other devices generating radio frequencies.

★ Use if you want an additional power amplifier to boost center channel power output.

AM loop antenna and FM antenna connection

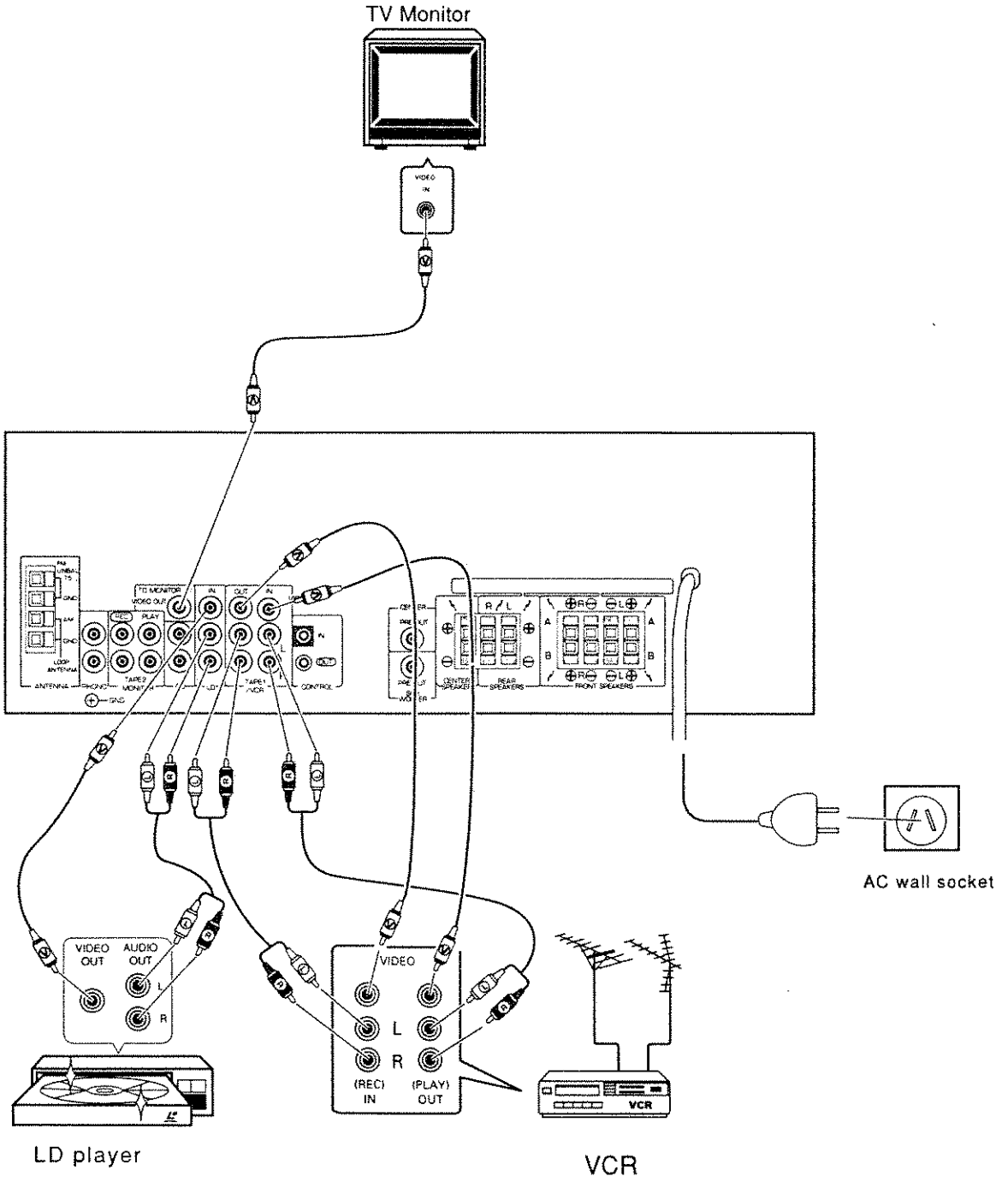
① Twist wire tip.
② Push the lever.
③ Insert the wire into the hole.
④ Pull the lever back.





To connect the Pioneer S-W1000 Powered Subwoofer, connect the receiver's subwoofer output to the subwoofer's input.

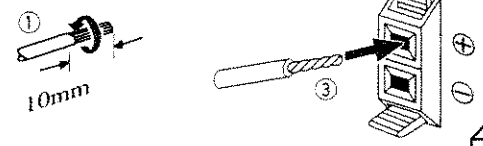
VIDEO SYSTEM CONNECTIONS



SPEAKER CONNECTIONS

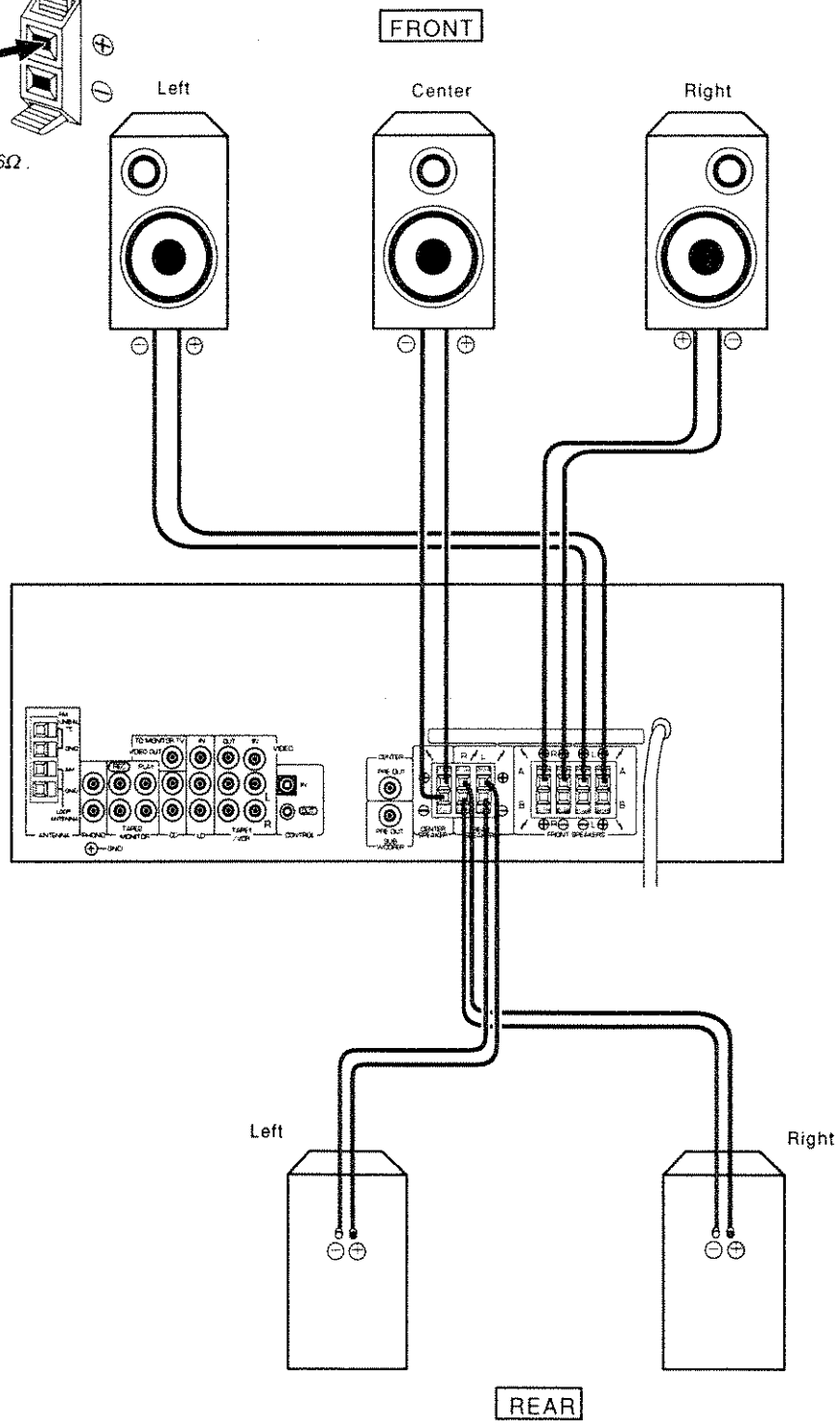
Speaker cord connection

① Twist wire tip.
② Push the lever down (or up).
③ Insert the cord into the hole.
④ Pull the lever back.

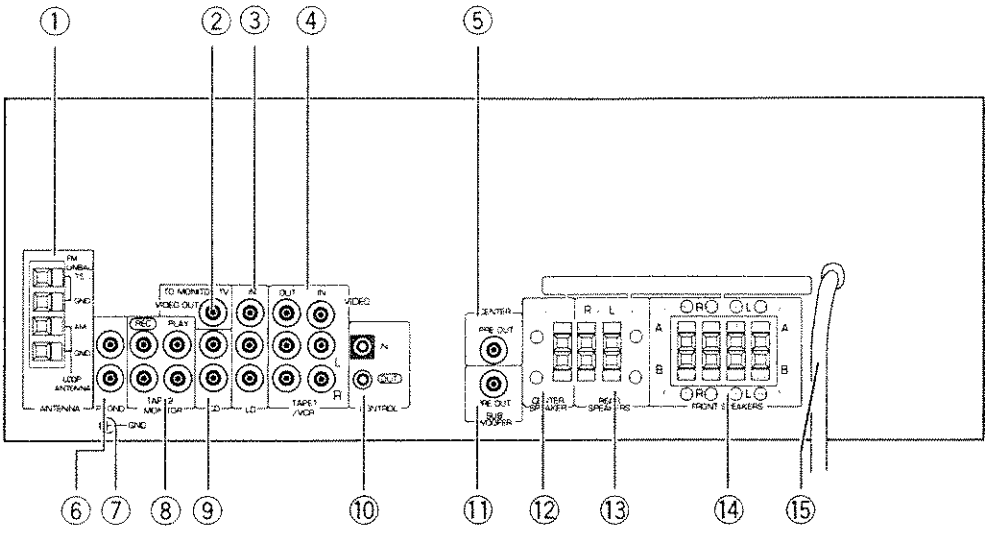


NOTE:

Use speakers with an impedance of 8Ω to 16Ω .



REAR PANEL FACILITIES



① FM/AM ANTENNA terminals

Use these antenna terminals for reception of normal FM and AM broadcasts.

② VIDEO OUT (TO MONITOR TV) jack

Connect to a monitor TV or to TV sets with video input terminals to watch program materials from a VCR or LD player connected to this unit.

③ LD input jacks

Connect to an LD player's output jacks (audio, video).

④ TAPE 1/VCR jacks

Connect to the first cassette deck or a VCR. With a VCR, also connect the video jacks.

⑤ CENTER PRE OUT jack

When a separate power amplifier is used to drive the surround center speaker, connect the power amplifier to this jack.

⑥ PHONO input jacks

Connect to the output cables from a turntable.

⑦ GND terminal

Connect the turntable ground lead to this terminal.

⑧ TAPE 2 MONITOR jacks

Connect to audio components such as a second cassette deck or a graphic equalizer.

⑨ CD input jacks

Connect to the output jacks of a compact disc player.

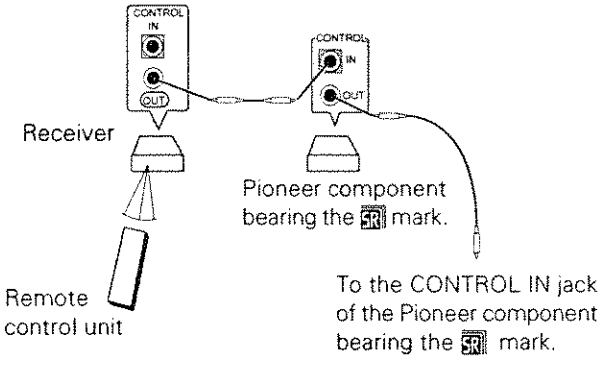
⑩ CONTROL IN/OUT jacks

IN :Connect this jack to other Pioneer components when using those components to control this unit.

OUT :Connect this jack to other Pioneer components when using the remote control of this unit to control the other components.

NOTE :

The receiver's remote sensor does not function when a plug is inserted in the IN jack. To operate, point the remote control unit at the remote sensor on the component to which the receiver's IN jack is connected.



⑪ SUB WOOFER PRE OUT jack

If you want to boost the low frequencies, connect to a subwoofer power amplifier.

⑫ CENTER SPEAKER terminals

Connect the center speaker to these terminals.

NOTE :

Do not allow any of the cord's conductors to protrude from the terminals or touch any other conductors. Malfunctions or breakdowns may occur when conductors come into contact with each other. Use speaker with an impedance of 8 Ω to 16 Ω .

⑬ REAR SPEAKERS terminals

Connect the rear speakers to these terminals.

NOTES:

- *Do not allow any of the cord's conductors to protrude from the terminals or touch any other conductors. Malfunctions or breakdowns may occur when conductors come into contact with each other. Use rear speakers with an impedance of 8 Ω to 16 Ω.*
- *Be sure to connect two speakers (L, R). There will be no sound if only one speaker is connected.*

⑭ FRONT SPEAKERS terminals

A :Connect to the first set of speakers.

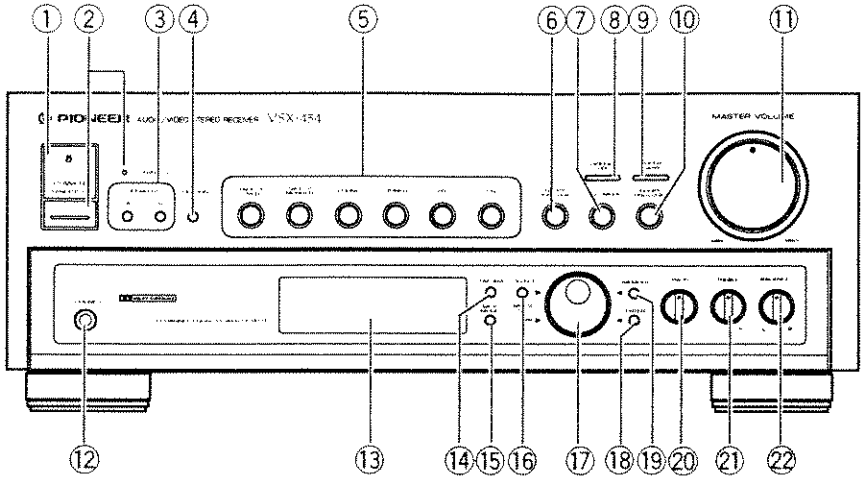
B :Connect to the second set of speakers.

NOTE:

Do not allow any of the cord's conductors to protrude from the terminals or touch any other conductors. Malfunctions or breakdowns may occur when conductors come into contact with each other. Use front speakers with an impedance of 8 Ω to 16 Ω .

⑮ Power cord

FRONT PANEL FACILITIES



① Remote sensor

② POWER STANDBY/ON switch
STANDBY indicator

This is the switch for electric power.

ON : When set to the ON position, power is supplied and the unit becomes operational.

STANDBY: When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

The STANDBY indicator lights when the power is set to STANDBY, and goes out when set to ON.

(Timer ON/OFF possible)

When the unit is switched ON, ON/OFF control can be performed by means of the optional timer.

NOTE:

When the power is initially turned ON, muting will be applied to prevent sound from being output for about 5 seconds.

③ SPEAKERS buttons (A,B)

ON/OFF switches for the A and B speaker systems.

④ RETURN button

Press this button to return the receiver to its initial state. TUNER is selected at this initial state. Adjust the sound level by using the MASTER VOLUME control.

TAPE 2 MONITOR .... OFF MUTING ..... OFF
SFC MODE ..... OFF FUNCTION ..... TUNER
SUPER BASS ..... OFF

And SPEAKERS buttons switch as follows.

Before pressing the RETURN button		After pressing
Both A and B are off	→	Only A is on
Only A is on	→	No change
Only B is on	→	Both A and B are on
Both A and B are on	→	No change

NOTE:

Press the RETURN button, and the frequency last selected is received. If reception of the frequency last selected is not possible, the mode automatically switches to AUTO TUNING.

⑤ Input selector buttons

TAPE 1/VCR
: Press when performing playback on a VCR unit or cassette deck.

TAPE 2 MONITOR
: Press when performing playback on a second cassette deck and when monitoring recording.

PHONO : Press when playing records on a turntable.

TUNER : Press when listening to radio broadcasts.

LD : Press when performing playback on an LD player.

CD : Press when playing compact discs on a CD player.

⑥ DOLBY 3CH LOGIC button

Select this setting when stereo-source regeneration and rear speakers are not connected and you wish to use the front L, front R, and center speakers to enjoy audio/visual material bearing the DOLBY SURROUND mark.

⑦ SFC MODE button

Each time you press it, the mode and the display indications change as follows.

STUDIO → SIMULATED SURROUND → off

⑧ DISPLAY OFF button

This switches the display OFF.

⑨ SUPER BASS button

Press this button when you want to boost the bass.

⑩ DOLBY PRO-LOGIC button

Switches DOLBY PRO-LOGIC SURROUND on and off.

⑪ MASTER VOLUME control

Use it to simultaneously adjust the sound volume from the front, center, and rear speakers.

⑫ PHONES jack

Connect the plug on your headphones to this jack. Set SPEAKERS A and B switches to OFF if you want to cut the sound from the speakers and listen to it only through the headphones.

⑬ Display section

See page 13.

⑭ FM/AM button

Use this to switch between FM and AM frequency band reception.

⑮ MPX MODE button:

Use to select the auto stereo mode or monaural mode when listening to FM broadcasts. The monaural mode has been selected when the MONO indicator in the display section is lit.

Auto stereo mode

Normally, leave in this mode for reception. When a stereo FM broadcast is received, it will be automatically reproduced in stereo.

Monaural mode

When receiving distant stations or stations with weak broadcast signals, the input signal may be weak, thus resulting in increased noise during FM stereo broadcasts. In this event, setting the receiver to the monaural mode will reduce the noise. In this case, however, FM stereo broadcasts will be reproduced in monaural sound.

NOTE:

This button has no effect on reception of AM broadcasts.

⑯ SELECT button

Press this button to switch to the station mode. Then you can turn the MULTI-JOG to select a station.
When in the Frequency mode, tuning the MULTI-JOG raises or lowers the frequency.

⑰ MULTI-JOG

Use during tuner operation to select frequencies and station numbers.

⑱ ENTER button

Press this button when you are in the frequency preset mode, and the displayed frequency is memorized in the selected station. (Station indications stop flashing and stay lit.)

⑲ MEMORY button

Press this button to switch to the frequency preset mode.

⑳ BASS control

Use to adjust the low-frequency level. Turn clockwise to boost bass, and counterclockwise to attenuate bass.

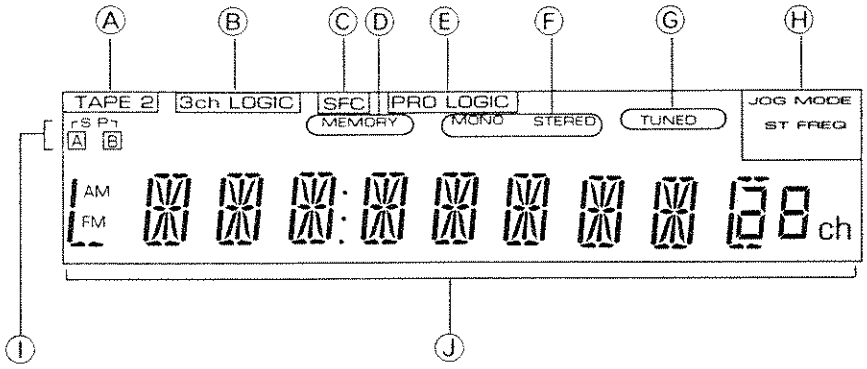
㉑ TREBLE control

Use to adjust the high-frequency level. Turn clockwise to boost treble, and counterclockwise to attenuate treble.

㉒ BALANCE control

Use to adjust the sound volume balance between left and right speakers.
L: Decreases the sound on the right side.
R: Decreases the sound on the left side.
Usually, left and right volume levels should be the same.

DISPLAY SECTION



Ⓐ TAPE 2 indicator

Lights up when the input selector is set to TAPE 2 MONITOR ON.

Ⓑ DOLBY 3CH LOGIC indicator

Ⓒ SFC indicator

This lights when an SFC mode (STUDIO, SIMULATED SURROUND) is selected.

Ⓓ MEMORY indicator

Ⓔ DOLBY PRO-LOGIC indicator

Ⓕ MONO/STEREO indicator

MONO : Lights up when the FM MONO mode is selected with the MPX MODE button.

STEREO : Lights up when a stereo FM broadcast is being received.

Ⓖ TUNED indicator

Lights up when a station is tuned.

Ⓗ JOG MODE Indicators

When operating the TUNER with the multi-jog, these indicate the station mode (ST) or the frequency mode (FREQ).

Ⓘ SP (SPEAKERS) A,B indicators

Shows which speaker system (or systems) are switched on.

Ⓙ Character display

OPERATING THE TUNER

Press the POWER switch to the ON position.
Select TUNER with the input selector.
Be sure to turn the TAPE 2 MONITOR button OFF when listening to AM or FM broadcasts.
Switch ON the SPEAKERS button corresponding to the speakers you wish to use.

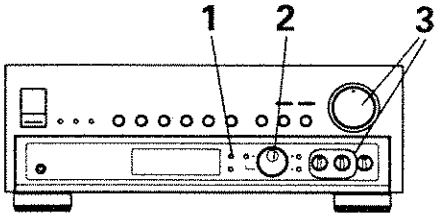
FM auto stereo reception and monaural reception

Each time you press the MPX MODE button, the MONO indicator in the display section lights or goes out.

- If an FM stereo broadcast is received when the MONO indicator is out, the STEREO indicator lights, and sound is in stereo.
- If an FM stereo broadcast is received when the MONO indicator is lit, the sound will be monaural. If there is interference during stereo mode reception, switch to mono. The sound will become monaural but interference will be reduced.

TUNING INTO STATIONS

Turn the MULTI-JOG, and the tuning frequency changes. Turning in a clockwise direction raises the frequency, while turning in a counter-clockwise direction lowers the frequency.



1. **Use the FM/AM button to select either FM or AM.**
   Confirm that the JOG MODE indicator in the display shows "FREQ".
   If "ST" is displayed, press the SELECT button to switch to "FREQ".
2. **Turn the MULTI-JOG until you reach the frequency of a desired station.**
   When a station is received, the TUNED indicator will light up.

NOTE:

The TUNED indicator may not light with broadcasts received over long distances, or when the broadcast signals are extremely weak.

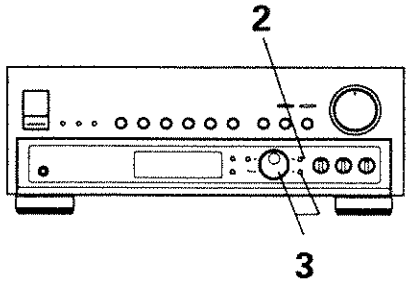
3. **Adjust the volume and tone as desired.**

Auto tuning

Auto tuning is convenient when you do not remember the frequency of a desired station, or when you wish to find stations that you do not normally listen to. Operate by remote control. (Refer to page 20.)

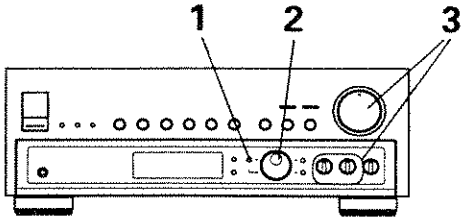
PRESET TUNING

FREQUENCY PRESETTING



1. **Tune into the desired station.**
   See the section "TUNING INTO STATIONS". In addition to station frequencies, the MPX MODE (auto stereo mode or monaural mode) can also be preset (FM only).
2. **Press the MEMORY button.**
   The station number flashes in the display. (Memory mode)
3. **Turn the MULTI-JOG to select the station you want to memorize, and press the ENTER button.**
   - The station number lights in the display, indicating that it has been memorized.
   - If you do not press the ENTER button within about five seconds after selecting a station, the memory mode is canceled.
4. **Repeat steps 1 to 3 to preset additional stations.**
   A total of 30 AM and FM stations may be preset. When you store a new preset, it takes the place of the previously stored station (if any).

LISTENING TO BROADCASTS USING PRESET TUNING



1. **Press the SELECT button.**
   The "ST" of the JOG MODE's indicator lights in the display, and the mode switches to station call.
2. **Turn the MULTI-JOG to select a station.**
3. **Adjust the volume and tone as desired.**

NOTE:

Even if the receiver power cord is unplugged, data remains in memory for several days. If the contents of the memory are erased, preset once more.

Last station memory

When the POWER switch is pressed to turn the power on, the last station received before the power was previously turned off will be tuned in again. When the power is ON, if the FM/AM button is pressed, the last station received before the FM/AM button was previously pressed will be tuned in again.

RECEIVING FM SIMULCAST TV PROGRAMS

By combining a TV set with this receiver, you can receive FM simulcast TV programs (stereo TV sound transmitted from an FM radio station) while viewing the video portion on your TV.

1. **Select the desired TV program with the TV set.**
2. **Tune in the desired FM simulcast TV program on the receiver.**
3. **Adjust the volume and tone controls as desired.**

OPERATING THE AUDIO/VIDEO COMPONENTS

Press the power switch to the ON position, and turn on the power to the other components you wish to use (for example, TV, VCR, cassette deck, etc.).

PLAYBACK

1. **Use the input selector buttons to select the desired program source.**

Program Source	Input selector
To play back on a VCR connected to the TAPE 1/VCR jacks, or to play back on a cassette deck	TAPE 1/VCR
To listen to a tape on the cassette deck connected to TAPE 2 MONITOR jacks	TAPE 2 MONITOR
To listen to records	PHONO
To watch a LaserDisc	LD
To listen to compact discs	CD

*If you select a music source other than TAPE 2, switch OFF the TAPE 2 MONITOR.

2. **Operate the appropriate audio/video component to play back the program source.**
   For a video source, switch the TV connected to this unit to the video input mode.
3. **Adjust the volume and tone controls as desired.**
   Refer to pages 3, 4 and 17 for details concerning surround operation.

RECORDING WITH A CASSETTE DECK

RECORDING WITH VCR/TAPE 1

If the TAPE 2 MONITOR button is ON, press to turn OFF.

1. **Select the source you want to record from with the input selector buttons.**
   When recording AM or FM broadcasts, select a preset station using the MULTI-JOG. If the desired station has not been preset, tune in the station.
2. **Start recording on the cassette deck.**
3. **Play the desired program source (record, compact disc, etc.).**
   The volume, balance, and tone controls have no effect on the recording.

RECORDING WITH TAPE 2

1. **Select the source you want to record from with the input selector buttons.**
2. **Start recording on the TAPE 2 cassette deck.**
3. **Play the desired program source (record, compact disc, etc.).**
   The volume, balance, and tone controls have no effect on the recording.

When copying a tape, playback on the TAPE 1/VCR cassette deck, and record on the TAPE 2 cassette deck.

Tape monitoring

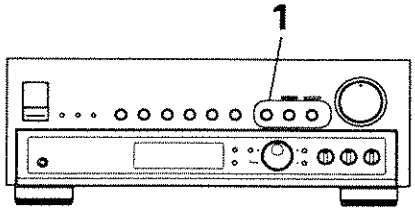
When recording is performed on a cassette deck equipped with a monitoring function, the recorded sound can be monitored through the speaker system by pressing the TAPE 2 MONITOR button to ON.

VIDEO RECORDING

1. **Select the source you want to record from with the input selector buttons.**
   When recording from a LaserDisc to VCR → LD
2. **Start recording on the VCR.**
   For VCR, select a line input (external input).
3. **Start playback on the component selected with the input selector.**
   The volume, balance, and tone controls have no effect on the recording.

SURROUND EFFECT AND DOLBY 3CH LOGIC

SURROUND LEVEL ADJUSTMENT



1. **Select the desired mode with the DOLBY PRO-LOGIC button, SFC MODE button, and DOLBY 3CH LOGIC button.**
   The SFC MODE changes in sequence each time the SFC MODE button is pressed. (The SFC indicator lights.)

   STUDIO → SIMULATED SURROUND → off

2. **When you select DOLBY PRO-LOGIC, DOLBY 3CH LOGIC , press the CENTER MODE button of the remote control unit.**
   The CENTER MODE changes in sequence each time this button is pressed.

   DOLBY PRO-LOGIC SURROUND:
   NORMAL → WIDE → PHANTOM

   DOLBY 3CH LOGIC:
   NORMAL → WIDE

3. **Use SPEAKERS button to turn on front speakers.**
4. **Adjust MASTER VOLUME to a suitable listening level.**
5. **Adjust the BALANCE control to center position.**
6. **Press the remote control's TEST TONE button to switch the test tone ON.**
   The test tone is output from each of the speakers in the following order.
   Front Left → Center[*1] → Front Right → Surround (Rear)
7. **Adjust so that the volume level is the same from each of the speakers.**
   - Use the CENTER LEVEL +, − buttons of the remote contol unit to adjust the center speaker volume level.[*2]
   - Use the REAR LEVEL +, − buttons of the remote contol unit to adjust the rear speaker volume level.[*3]
8. **Press the remote control's TEST TONE button to switch the test tone OFF.**

NOTES:

****1*** *When the SFC mode is on, or when the CENTER MODE button is PHANTOM position, no test tone is output from the center speaker.*

****2*** *Only when using DOLBY PRO-LOGIC SURROUND and DOLBY 3CH LOGIC, can you adjust the CENTER LEVEL.*

****3*** *When using DOLBY 3CH LOGIC , the REAR speakers are not used.*

SETTING THE DELAY TIME

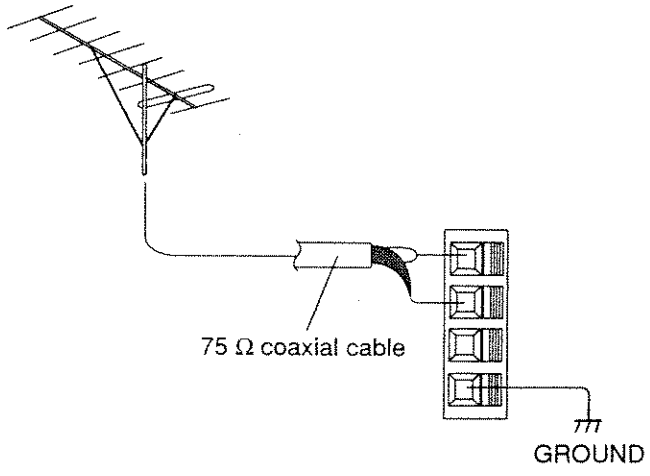
When using DOLBY PRO-LOGIC SURROUND or SIMULATED SURROUND, you can set the delay time between 15 ms and 30 ms (5 ms step). The standard setting is 20 ms, but you can select any setting of your choice.
When you press the DELAY TIME button on the remote control unit, the current delay time is displayed. Pressing it again changes the delay time.

HINTS FOR BETTER RECEPTION

EXTERNAL FM ANTENNA

The main advantage of FM over AM is the quality of the broadcast signal. In order to benefit fully from the high signal quality of FM broadcasts, it is recommended that a special-purpose FM antenna be installed. In weak signal areas, a multi-element (3-element, 5-element, 7-element) antenna should be used.

Connecting the 75Ω coaxial cable



GROUNDING

Grounding is recommended if reception of FM programs is impaired by noise. To ground, connect a thick polyvinyl-insulated wire to the GND terminal and attach the other end to a metal water pipe or grounding bar or wind it around a copper plate and bury it.

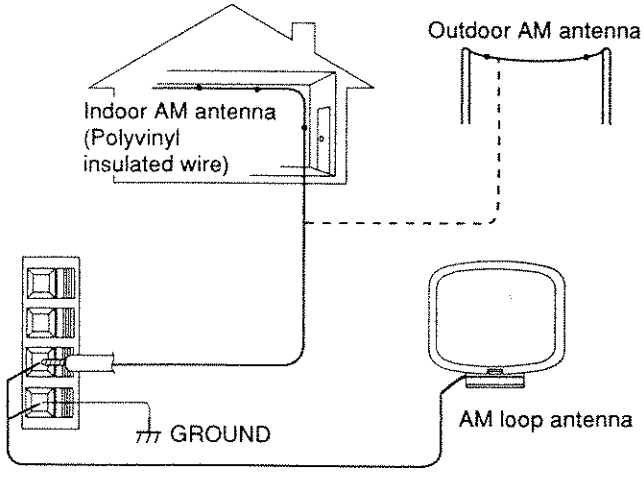
NOTE:

Never connect a wire to a gas pipe for grounding since sparks may ignite the gas.

EXTERNAL AM ANTENNA

If it is not possible to obtain adequate AM reception even by changing the orientation of the AM loop antenna, a separate indoor antenna or an outdoor antenna should be installed.

AM antenna connection



INDOOR AM ANTENNA

Use a vinyl-insulated wire 5 to 6 meters long and connect one end to the AM antenna terminal and affix the other end to the wall or ceiling, as high as possible.

NOTE:

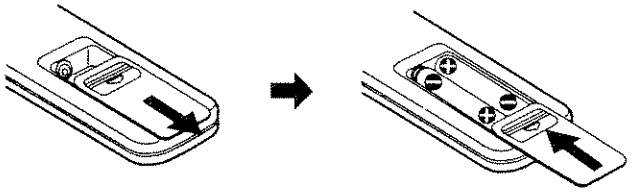
Do not detach the AM loop antenna when using an indoor or an outdoor AM antenna.

OUTDOOR AM ANTENNA

If reception quality is not improved sufficiently even when an indoor antenna is used, a vinyl-insulated wire should be installed outside and fixed in place.

REMOTE CONTROL OPERATION

PUTTING BATTERIES INTO THE REMOTE CONTROL UNIT



1. **Open the battery compartment cover on the rear of the remote control unit. The cover should open easily if you slide it in the direction of the arrow while pressing on it with your thumb.**
2. **Take out the two supplied batteries size (AA/R6), and insert them into the battery compartment in accordance with the indications in the compartment.**
3. **Close the cover of the battery compartment.**

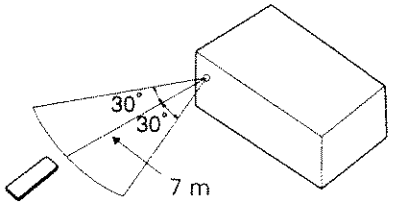
Incorrect use of batteries may lead to leakage or rupture. Always be sure to follow these guidelines:

A.
Always insert batteries into the battery compartment correctly matching the positive (+) and negative (-) polarities, as indicated inside the compartment.

B.
Never mix new and used batteries.

C.
Batteries of the same size may have different voltages, depending on their type. Do not mix different types of batteries.

REMOTE CONTROL RANGE



When operating the remote control unit, point the front of the unit at the front panel of the receiver. The remote control unit may be used within a range of about 7 meters from the remote sensor, within angles of up to about 30 degrees. Performance of the remote control unit is adversely affected in the presence of a strong fluorescent light. Keep such lights away, especially from the sensor window.

Battery Replacement
As battery power runs down, the range over which the remote control unit can operate decreases. When the range becomes too short, change the batteries.

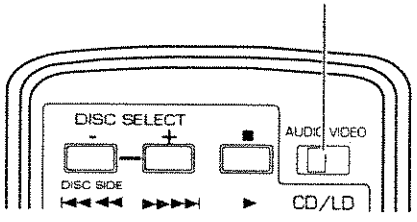
- The accessory remote control unit can be used to control some functions of other Pioneer cassette decks, CD players, tuners, VCRs, LD players, and TVs (only those bearing the Pioneer mark).
- When the accessory remote control unit is used to operate other PIONEER components with the mark, it cannot be used to operate functions which do not correspond to the functions listed on the remote control unit.

Transmit mode selector switch

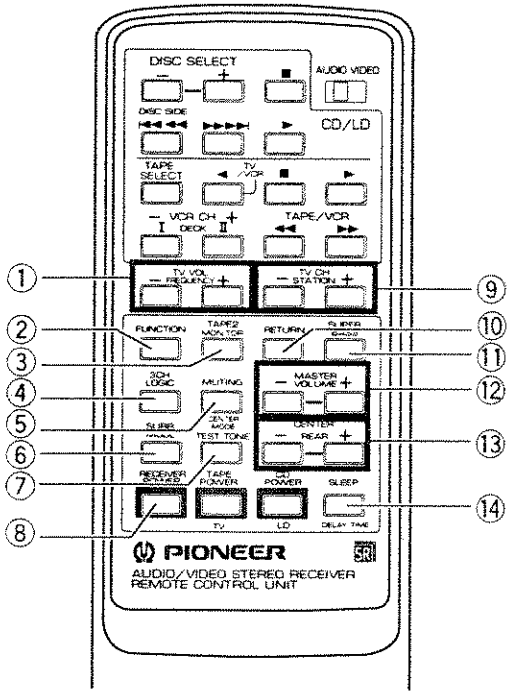
AUDIO:
Select this position for remote control operation of audio equipment such as a CD player or a cassette deck.

VIDEO:
Select this position for remote control operation of video equipment such as an LD player, VCR or TV.

Transmit mode selector switch



RECEIVER TUNER AND AMPLIFIER SECTION OPERATION



[TUNER SECTION OPERATION]

Set the AUDIO/VIDEO switch to AUDIO.

① FREQUENCY " + " (Up) " − "(Down) buttons

Shifts the frequency up (+) and down (−).

⑨ STATION " + " (Up) " − "(Down) buttons

Used for recalling memorized stations.

Auto tuning:

Press FREQUENCY + (up) or − (down) button until the frequency starts to change, then release it. The tuner will automatically search for a broadcasting station and stops when one is found, and the TUNED indicator lights up. To search for another station, press again.

Manual tuning:

Press FREQUENCY + (up) or − (down) button and release quickly. The tuning frequency will change by one step each time the button is pressed. Press as many times as necessary to tune in the desired station. The TUNED indicator lights up when the station is tuned in best.

- If you keep the FREQUENCY (+ / −) button depressed after the frequency has began to change, the reception frequency changes continuously, and stops when the button is released.

NOTE:

When AUTO TUNING is in use, reception may not be possible over long distances or when signals are weak. At these times MANUAL TUNING is recommended.

[AMPLIFIER SECTION OPERATION]

② FUNCTION button

Press to select the receiver input.

TAPE 1/VCR → PHONO → TUNER → CD → LD → TAPE 1/VCR

③ TAPE 2 MONITOR button

Switches TAPE 2 MONITOR ON/OFF.

④ 3CH LOGIC button

Switches DOLBY 3CH LOGIC ON/OFF.

⑤ MUTING button

Press to temporarily reduce sound. When set to the on position, MUTING is displayed. Press again to return to the original volume level.

⑥ SURR. (Surround) MODE button

The surround mode is switched in the following manner each time the button is pressed:

DOLBY PRO-LOGIC SURROUND → STUDIO → OFF → SIMULATED SURROUND → DOLBY PRO-LOGIC SURROUND

⑦ CENTER MODE/TEST TONE button

AUDIO/VIDEO switch : AUDIO position

Functions as a CENTER MODE button, enabling selection of the DOLBY PRO-LOGIC SURROUND and DOLBY 3CH LOGIC center mode.

AUDIO/VIDEO switch : VIDEO position

Functions as a TEST TONE button for switching the test tone ON/OFF.

Used to adjust the test tone volume level from each speaker. When the test tone is switched ON, the test tone is output through each speaker in turn for about two seconds. (The channel outputting the test tone is indicated in the display.) Adjust volume level so that it is the same from each speaker.

⑧ RECEIVER POWER button

Switches the receiver power ON/STANDBY.

⑩ RETURN button

Press to return the receiver to it's initial state. (Refer to page 11.)

⑪ SUPER BASS button
Switch ON when you want to boost bass. The SUPER BASS indicator lights.

⑫ MASTER VOLUME (+ , −) buttons
Use to adjust the overall volume level.

⑬ CENTER/REAR (+ , −) buttons
AUDIO/VIDEO switch : AUDIO position
Functions as CENTER LEVEL adjustment buttons.

AUDIO/VIDEO switch : VIDEO position
Functions as REAR LEVEL adjustment buttons.

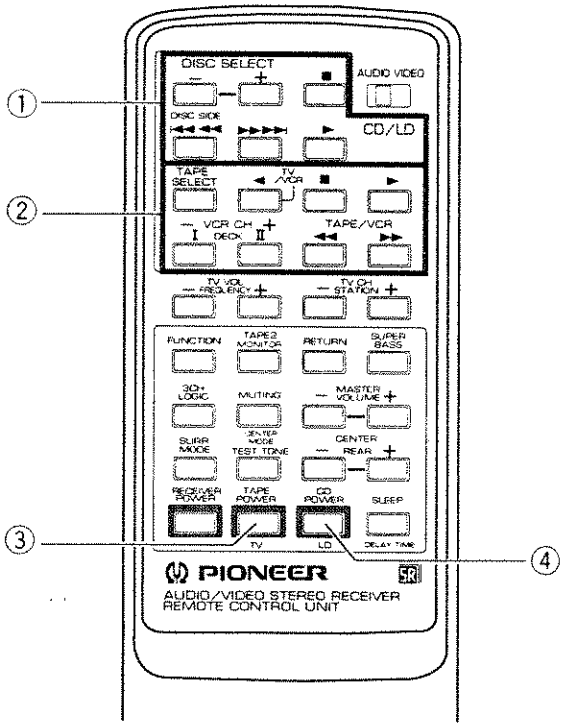
⑭ SLEEP/DELAY TIME button
AUDIO/VIDEO switch : AUDIO position
Functions as a SLEEP button.
Activates the SLEEP timer. The length changes in the following manner each time the button is pressed:

→ 90 min → 60 min → 30 min → off (0 min) →

When SLEEP is ON, the display section is about half as bright as when SLEEP is OFF.

AUDIO/VIDEO switch : VIDEO position
Functions as a DELAY TIME button. You can change rear speaker delay time during DOLBY PRO-LOGIC SURROUND or SIMULATED SURROUND operation.

CD PLAYER, CASSETTE DECK, TV, VCR, and LD PLAYER OPERATION



[CD PLAYER OPERATION]

Set the AUDIO/VIDEO switch to AUDIO.

① Operation buttons

DISC SELECT − , + buttons:
Use to select a disc with a file-type CD player.
Only the + button may be used to select the DISC No. (1 to 6) for a multi CD player, or used to select CD DISC Ⅰ / Ⅱ for a twin-tray CD player.

NOTE:
Some Multi CD players cannot be controlled using this button.

■ (STOP) button:
Stops playback.

⏮ (TRACK SEARCH) button:
Returns to the beginning of the track currently playing.

⏭ (TRACK SEARCH) button:
Advances to the next track.

► (PLAY) button:
Selects playback.

④ CD POWER button:
Switches CD player power ON/OFF.

[CASSETTE DECK OPERATION]

Set the AUDIO/VIDEO switch to AUDIO.

② Operation buttons

TAPE SELECT button:
Selects the cassette No. (1 to 6) for multi-cassette changer.

◄ (PLAY) button:
Selects reverse playback.

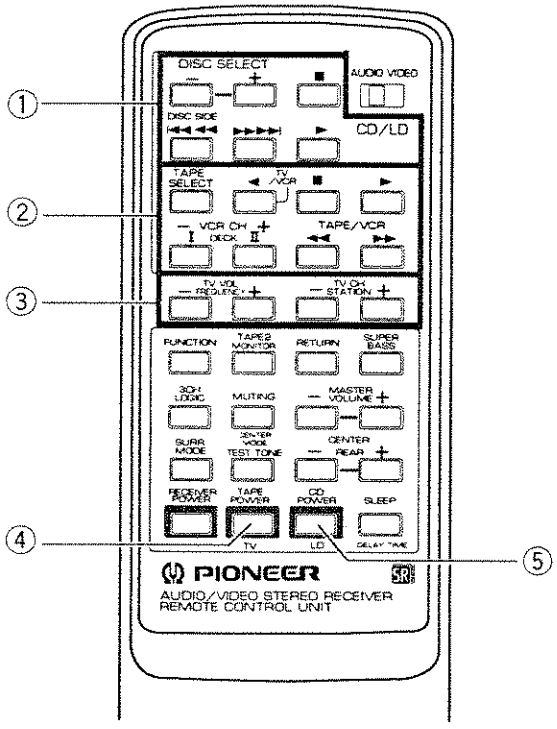
■ (STOP) button:
Stops tape transport.

► (PLAY) button:
Selects forward playback.

DECK Ⅰ , Ⅱ button:
Switches DECK Ⅰ and DECK Ⅱ .
When using a single cassette deck, select DECK Ⅱ .

◄◄, ►► (FF) button:
Rapidly advances the tape in the direction of the allows.

③ TAPE POWER button
Switches cassette deck power ON/OFF.



[LD PLAYER OPERATION]

Set the AUDIO/VIDEO switch to VIDEO.

① Operation buttons

DISC SIDE button:
Changes the disc side in an LD player capable of playing both sides of a disc.

■ **(STOP) button:**
Playback is stopped when pressed once.
With some LD players, pressing the button twice may open the disc tray.

◄◄ **(SCAN) button:**
Selects fast backward.

►► **(SCAN) button:**
Selects fast forward.

► **(PLAY) button:**
Selects playback.

⑤ LD POWER button

Switches LD player power ON/OFF.

[VCR OPERATION]

Set the AUDIO/VIDEO switch to VIDEO.

② Operation buttons

TV/VCR button:
This button can be used only for VCRs with a TV/VCR selector. Toggles the antenna output between VCR and TV.

■ **(STOP) button:**
Stops tape transport.

► **(PLAY) button:**
Selects playback.

VCR CH − (DOWN) button:
Shifts VCR's TV tuner channels is descending order.

VCR CH + (UP) button:
Shifts VCR's TV tuner channels is ascending order.

◄◄ **(REW) button:**
Rewinds the tape and allows picture search.

►► **(FF) button:**
Rapidly advances the tape and allows picture search.

[TV OPERATION]

Set the AUDIO/VIDEO switch to VIDEO.

③ Operation buttons

TV VOL (VOLUME) (− / +) buttons:
Raises and lowers the volume.

TV CH (Channel) (− / +) buttons:
Switches TV channels in order.

④ TV POWER button

Switches the power of the TV ON/OFF.

TROUBLESHOOTING

Incorrect operations are often mistaken for trouble and malfunctions. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Investigate the other components and electrical appliances being used. If the trouble cannot be rectified even after exercising the checks listed below, ask your nearest PIONEER authorized service center or your dealer to carry out repair work.

Symptom	Cause	Remedy
Power does not come on even when the POWER switch is pressed.	• Power cord is disconnected. • Instances are rare, but the problem may be due to the operation of the protector circuit.	• Connect cord securely. • Unplug the power cord of the unit from the AC wall outlet, then plug it in again.
Control is not possible regardless of what operation button is pressed.	• Static electricity affects the unit when the air is dry, such as in winter.	• Unplug the power cord of the unit from the AC wall outlet, then plug it in again. • If static electricity is pronounced, it is recommended that you operate the unit using the remote control unit.
No sound is produced, even when the input selector button is selected.	• Connections are incorrect. • The MUTING button is pressed. • VOLUME is turned down.	• Consult pages 5-8 and perform connections correctly. • Press the MUTING button to cancel the MUTING effect. • Raise volume.
	• Speaker connecting wires are disconnected from speaker terminals.	• Connect wires to terminals securely.
	• One or both of the input cords are disconnected.	• Connect input cords securely.
	• TAPE 2 MONITOR button is in the ON position.	• Press the button again to the OFF position.
	• The SPEAKERS button is OFF.	• Switch the SPEAKERS button ON.
No picture is produced, even when the input selector button is selected.	• Connections are incorrect. • The selected input selector button is not correct.	• Consult pages 5-8 and perform connections correctly. • Press the correct button.
High noise level.	• Station has not been tuned in to correct frequency.	• Tune the station in correctly.
	• Antenna has not been connected or has become disconnected.	• Connect the antenna securely.
	FM reception • Accessory FM antenna remains bundled up or it is not pointing in right direction.	• Straighten out the antenna and point in the direction which provides optimum reception.
	• Weak broadcasting station signals.	• Replace accessory FM antenna with outdoor FM antenna.
	AM reception • AM loop antenna is not pointing in right direction.	• Change the direction of the AM loop antenna and find a position where reception is improved.
	• Weak broadcasting station signals.	• Erect an outdoor AM antenna or connect a ground wire.
	• Noise is being picked up by this unit from other equipment (especially electrical appliances using motors or fluorescent lights).	• Turn off the appliances generating noise or remove them from the vicinity of the stereo equipment. • Separate the antenna from the unit by some distance.

TROUBLESHOOTING

Symptom	Cause	Remedy
No auto stop.	• Input signals are not strong enough.	• (FM) If the supplied simple antenna is being used, change to an outdoor antenna.
TV source cannot be seen when the VCR's TV tuner is used.	• TV antenna is not connected to the VCR, or connections are faulty.	• Consult the VCR's operating instructions, and connect the antenna correctly.
	• The VCR's input switch is set to line input.	• Set the VCR's input switch to built-in tuner.
No rear sound is produced.	• The SFC MODE switch is set incorrectly. • The REAR LEVEL is turned down. • Speaker connecting wires are disconnected from the REAR SPEAKERS terminals.	• Set correctly. • Refer to page 17 and adjust the rear level. • Connect wires to the terminals securely.
Remote control does not work.	• Batteries are dead or missing in remote control unit. • Poor angle or too great a distance from the remote sensor window. • There is an obstacle between you and the remote sensor window. • A fluorescent light is shining on the remote sensor window.	• Insert new batteries. • Use within 7 meters and within a 30 degree angle of the remote sensor window. • Change your position or move the obstacle. • Move the receiver so fluorescent light does not shine directly on the receiver's front panel remote sensor window.

Abnormal functioning of this unit may be caused by static electricity, or other external interference. To restore normal operation, turn the power off and then on again, or unplug the AC power cord and then plug it in again.

SPECIFICATIONS

Amplifier Section

Continuous Power Output (DIN, 2 channels driven)
Front (1kHz, T.H.D. 1%, 4 Ω) ..... 120 W + 120 W
Continuous Power Output (2 channels driven) *
Front (20 Hz - 20,000 Hz, T.H.D. 0.09 %, 8 Ω)
..... 75 W + 75 W

Continuous Power Output (DIN, 4 channels driven)
Surround
Front ..... 80 W + 80 W (1kHz, 1 %, 4 Ω)
Center ..... 80 W (1kHz, 1 %, 4 Ω)
Rear ..... 80 W (1kHz, 1 %, 4 Ω)
Total harmonic distortion (both channels driven) *
Front (20 - 20,000 Hz, 8 Ω, 50 W OUTPUT) ..... 0.09 %
Dynamic Power (2 Ω /4 Ω/8 Ω) ..... 180 W/150 W/100 W
Input (Sensitivity/Impedance)
PHONO MM ..... 2.8 mV/47 kΩ
CD, TAPE 1/VCR, TAPE 2, LD ..... 200 mV/47 kΩ
Phono Overload Level (T.H.D. 0.1%, 1 kHz)
PHONO MM ..... 100 mV
Frequency Response
PHONO MM ..... 20 Hz to 20,000 Hz ±0.3 dB
CD, TAPE 1/VCR,
TAPE 2, LD ..... 5 Hz to 100,000 Hz $^{+0}_{-3}$ dB
Output (Level/Impedance)
TAPE 1/VCR REC, TAPE 2 REC ..... 200 mV/2.2 kΩ
VCR OUT ..... 200 mV/2.2 kΩ
Tone Control
BASS ..... ±8 dB (150 Hz)
TREBLE ..... ±8 dB (10 kHz)
SUPER BASS ..... +8 dB (80 Hz)
Signal-to-Noise Ratio (IHF, short circuited, A network)
PHONO MM ..... 72 dB
CD, TAPE 1/VCR, TAPE 2, LD ..... 96 dB
Signal-to-Noise Ratio (DIN)
(Continuous rated power output / 50 mW)
PHONO MM ..... 67 dB/61 dB
CD, TAPE 1/VCR, TAPE 2, LD ..... 82 dB/62 dB

* *Measured by Audio Spectrum Analyzer.*

VIDEO Section

Input (Sensitivity/Impedance)
VCR, LD ..... 1 Vp-p/75 Ω
Output (Level/Impedance)
VCR ..... 1 Vp-p/75 Ω
Frequency Response
VCR, LD → MONITOR ..... 5 Hz to 7 MHz $^{+0}_{-3}$ dB
Signal-to-Noise Ratio ..... 55 dB
Cross Talk ..... 55 dB

FM Tuner Section

Frequency Range ..... 87.5 MHz to 108 MHz
Usable Sensitivity ..... Mono:11.2 dBf, IHF (1.0 µV/75 Ω)
50 dB Quieting Sensitivity ..... Mono: 16.8 dBf
Stereo: 38.6 dBf
Signal-to-Noise Ratio ..... Mono: 73 dB (at 85 dBf)
Stereo: 70 dB (at 85 dBf)
Distortion ..... Stereo: 0.5 % (1 kHz)
Alternate Channel Selectivity ..... 60 dB (400 kHz)
Stereo Separation ..... 40 dB (1 kHz)
Frequency Response ..... 30 Hz to 15 kHz (±1) dB
Antenna Input ..... 75 Ω unbalanced

AM Tuner Section

Frequency Range ..... 531 kHz to 1,602 kHz (9 kHz step)
Sensitivity (IHF, Loop antenna) ..... 350 µV/m
Selectivity ..... 25 dB
Signal-to-Noise Ratio ..... 50 dB
Antenna ..... AM Loop antenna

Miscellaneous

Power Requirements ..... AC 240 V, 50/60 Hz
Power Consumption ..... 700 W
In Standby Condition 3W
Dimensions ..... 420 (W) × 155 (H) × 300 (D) mm
Weight (without package) ..... 9.4 kg

Furnished Parts

FM Antenna 1
AM Loop Antenna 1
AA/R6 Dry Cell Batteries 2
Remote Control Unit 1
Operating Instructions 1

NOTE:

Specifications and the design are subject to possible modifications without notice, due to improvements.

MAINTENANCE OF EXTERNAL SURFACES

- Use a polishing cloth or dry cloth to wipe off dust and dirt.
- When the surfaces are dirty, wipe with a soft cloth dipped in some neutral cleanser diluted five or six times with water, and wrung out well, and then wipe again with a dry cloth. Do not use furniture wax or cleaners.
- Never use thinners, benzine, insecticide sprays or other chemicals on or near this unit, since these will corrode the surfaces.

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PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS [USA] INC. P.O. BOX 1540, Long Beach, California 90801-1540
PIONEER ELECTRONICS OF CANADA, INC. 300 Allstate Parkway Markham, Ontario L3R OP2, Canada
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium, TEL: 03/570.05.11
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia, TEL: [03] 580-9911
PIONEER ELECTRONICS DE MEXICO S.A. DE C.V. Augusto Rodin No. 128 PB Col. San Juan Mixcoac Mexico D.F. CP.03730 TEL: 52-5-598-3950

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